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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/073,037

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Michael A. Mayor

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EDELL, SHAPIRO & FINNAN, LLC  
1901 RESEARCH BOULEVARD  
SUITE 400  
ROCKVILLE, MD 20850

EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/073,037	<b>Applicant(s)</b> MAYOR ET AL.	
	<b>Examiner</b> Kevin Y. Kim	<b>Art Unit</b> 2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18,24-38,43-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-38 and 43-48 is/are allowed.
- 6) ☒ Claim(s) 1-12,16-18,24-33,49,52 and 55 is/are rejected.
- 7) ☒ Claim(s) 13-15,50,51,53,54,56 and 57 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. The indicated allowability of claim 12,16-18 is withdrawn in view of the newly discovered reference(s) to Christian et al (US 5,446,924). Rejections based on the newly cited reference(s) follow.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1-12, 16-18, 24-33, 49, 52 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ames (US 5,233,626) in view of Christian (US 5,446,924).

Claims 1, 12, 24, 49, 52 and 55.

Ames discloses a method of combining signals transmitted from a plurality of transmitting devices to a receiving device in a communication system, comprising

- (a) coordinating transmissions of the plurality of the transmitting communication devices such that a plurality of transmitted signals are respectively transmitted over the same communication channel by the plurality of transmitting communication devices substantially simultaneously, each of the transmitted signals including an information signal which is coherently combinable with corresponding information signals in others of the transmitted signals; col. 4, lines 3-5,
- (b) receiving the transmitted signals at the receiving communication device such that respective arrival times of the transmitted signals are offset from one another as a function of respective positions of the transmitting communication devices; col. 4, lines 7-11,
- (c) time aligning the transmitted signals to compensate for the respective arrival times of the transmitted signals; col.5, lines 57-64,
- (d) combining the transmitted signals to form a combined signal including at least a combined information signal; col.7, lines 43-51,and
- (e) detecting the combined signal to determine the presence of the transmitted signals. Col.7, lines 52-61.

Ames is silent as to whether “a common time reference” is established in the repeaters and the repeaters are commanded to schedule the transmission “ at a certain time.”

Christian et al teaches repeaters that simultaneously transmit a signal to a receiver in order to provide simulcast coverage to receivers. See col. 2, lines 21-36. This simulcast capability clearly requires a common time reference among the repeaters and commanding the

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repeaters to schedule the transmission such that the repeaters can transmit respective signals at the same time. Thus, it would have been obvious to one skilled in the art to provide a common time reference to the repeaters such that of Ames such that the transmissions from the repeaters are set to being at the same time for the purpose of providing simulcast coverage to intended receivers as taught by Christian et al.

Claims 2, 25 and 26.

Ames further discloses correlating the acquisition signal of transmitted signals received by the receiving communication device to a stored signal to estimate the arrival times of the transmitted signals; see 5, lines 25-50,

phase rotating the transmitted signals to adjust a relative timing, see col.5, lines 57-64 and

combining information signals from at least some of the transmitted signals correlated in (b) to form the combined information signal.

Claims 3 and 6.

Ames further discloses acquisition signal in each of the transmitted signals is identical. See col. 4, lines 3-5.

Claims 4 and 21.

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Ames further discloses phase rotating at least some of the transmitted signals correlated in (b) to adjust a relative timing of the transmitted signals to account for timing offsets among the respective arrival times of the transmitted signals. See col. 4, lines 65-66.

Claim 5.

The transmitted signals arrive at the receiving communication device within an acquisition time interval having a duration sufficiently short to permit combining of the transmitted signals. See col. 6, lines 1-11.

Claims 7 and 29.

Ames further discloses determining a channel impulse response from the serial probe. See col. 5, lines 57-64.

Claims 8 and 30.

Ames further discloses combining the transmitted signals by phase matching and adding the magnitude of the transmitted signals. See col. 7, lines 43-51

Claims 9 and 31.

Ames further discloses that the transmitted signals are combined using an equalizer. See col. 4, lines 62-65.

Claims 10, 16 and 32.

Ames describes that at least one of the transmitting devices is a mobile communication device. See col. 4, lines 2-3.

Claim 11, 17 and 33.

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Ames does not limit the receiver to either fixed or mobile station, indicating that both modes are included.

Claim 18.

The transmissions are made at the same time which is "the time of day."

Claim 27.

Ames describes a digital matched filter configured to generate a matched filter signal based on the transmitted signals received by the receiving communication device. See col. 5, lines 25-26.

Claim 28.

Ames describes a plurality of tapped delay lines configured to modify the phase and amplitude of the transmitted signals. See delays in Fig.2 (26-1,...,26-n).

***Allowable Subject Matter***

5. Claims 13-15, 50, 51, 53, 54, 56 and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claim 34-38, 43-48 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Kevin Kim", is positioned above the printed name.

**KEVIN KIM  
PATENT EXAMINER**